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### **Document Change Record**

Rev.	Date	Pages affected	Change Description
1	2010-07-30		Initial version
2	2011-02-01	All	Updated manual with new screenshots and instructions on 32-
			bit and 64-bit installers
3	2011-04-26	1,2	Updated Installation chapter with instructions on installing
			IXXAT drivers

# **1** Requirements

Supported IXXAT USB-to-CAN driver for Windows must be greater than or equal to version 2.16.

The installer might need to install the latest .NET Framework from Microsoft if not already installed on your computer.

### 2 Installation

First step is to install the IXXAT USB-to-CAN driver. Both VCI V2 and VCI V3 are compatible with EV Powercharger tools. The latest driver VCI V3 supports both 32- and 64-bit Microsoft Windows operating systems.

For downloading VCI V3 driver and installation manual please visit:

http://ixxat.com/download\_vci\_v3\_en.html



To start the installation process of EV Powercharger tools on a:

**32-bit** operating system use the installer "EV Powercharger Tools Setup x86". **64-bit** operating system use the installer "EV Powercharger Tools Setup x64".

The EV PowerCharger Tools Setup Wizard will appear



Figure 1 Step 1 of the EV Powercharger Tools Setup Wizard

Press the next button to continue to the next step of the installation process. The "Cancel" button will abort the installation.



闄 EV Powercharger Tools	- • •
Select Installation Folder	
The installer will install EV Powercharger Tools to the following folder.	
To install in this folder, click "Next". To install to a different folder, enter it b	elow or click "Browse".
Eolder: C:\Program Files\Eltek Valere\EV Powercharger Tools\	B <u>r</u> owse Disk Cost
Install EV Powercharger Tools for yourself, or for anyone who uses this c	omputer:
─ Everyone	
Iust me	
Cancel < <u>B</u> ack	Next >

Figure 2 Step 2 of the EV PowerCharger Tools Setup Wizard.

In step 2 of the setup wizard, please choose which folder you would like to save the EV PowerCharger Tools application. To change directory, click browse and choose your preferred folder.

Follow the instruction given in the setup wizard until EV PowerCharger Tools is successfully installed.

# 3 Using EV Powercharger tools

Execute EV Powercharger Tools from the start menu "Programs" – "Eltek Valere" – "EV Powercharger" - "EV Powercharger Tools". The window shown in Figure 3 will appear.



🗢 EV PowerCharger	Fools	
EV Powerch 402210.003 v1.00	arger Tools	
¢	() <b>(</b>	
EV Powercharger	toolset	
Enter or detect the to explore the EV	e CAN configura Powercharger.	tion and use the toolset
Base CAN ID:	0x2FF	
CAN speed:	500Kbit •	
Charger type:	360V •	
	Remembe	r CAN settings
	Close	
	<u>C</u>	

Figure 3 EV Powercharger Tools

Prior to using the tools the CAN configuration must be specified. This can be done manually if the configuration is known or automatically through detection (see Section 3.1). The CAN configuration can be remembered the next time the application starts if the checkbox labeled "Remember CAN settings" is ticked.

Once a CAN configuration has been manually specified or detected a tool can be used (see Section 3.3).

# 3.1 CAN settings

The following sections list the CAN configuration of the application.

### 3.1.1 Base CAN identifier

The base CAN identifier determines which 11-bit CAN identifiers are used to communicate with the charger(s). The default base CAN identifier of an EV Powercharger is 0x2FF.

See more details on the base CAN identifier in document: EV Powercharger CAN protocol description (B-2086930-1-1)

### 3.1.2 CAN speed

There are four CAN speed options: 125Kbit, 250Kbit, 500Kbit and 1000Kbit. The default CAN speed of an EV Powercharger is 500Kbit.

### 3.1.3 Charger type

There are three charger types: 110V, 220V and 360V.

# 3.2 CAN settings detection





Click on the "Detect" button to automatically detect the base CAN identifier, CAN speed and charger type of an EV Powercharger.

If more than one EV Powercharger is connected on the CAN bus the detect functionality will only work if the chargers share the same configuration.

The detect operation might take a while. When the operation completes the discovered CAN configuration is reflected in the window.

# 3.3 Tools

The following sections list the tools supplied by the application.

#### 3.3.1 Configurator



The charger configuration tool can be used to change the CAN configuration, charger address, maximum input current, CAN communication timeout and active CAN protocol of an EV Powercharger.

All chargers being detected with the CAN configuration specified or detected in Section 3.1 are listed in the "Detected chargers" dropdown list.

Note that the "Eltek" CAN protocol should only be used by Eltek personnel.

Detected chargers: 1	•	
Charger configuration		
New charger address:	1	
CAN base identifier:	0x2FF	
CAN speed:	500Kbit	•
Charger type:	400V	*
Maximum AC current:	16,0	A
Communication timeout:	1000	ms
Active protocol:	TBCM	C Eltek
Remember settings:	Ves Yes	
Upda	te	



Figure 4 Charger configuration

### 3.3.2 Control system simulation



😻 EV Powercharger	control system simulation	
File Tools		ELTEK VALERE
Choose control type:	Charger on/off:	● On
Broadcast Individual	Broadcast Power demand:3060.00W	
0	Output voltage limit:	360 Update
	Output current limit:	10 Update
ID Serial#	Status AC voltage AC	Current DC voltage DC Current Power Tin Tout Alarms
1 987654321098	Charge 239V @ 50Hz 0,	10A 361,60V 0,00A 0W/3060W 30°C 33°C
		Close

Figure 5 Control system simulation

The control system simulation tool is used to control and monitor an EV Powercharger. Figure 5 shows the control system simulation tool monitoring and controlling a single charger turned off.

- The "charger on/off" command starts or stops the charger (PFC and DC/DC)
- The "power demand" command provides a power reference in % of full power to the charger
- The "output voltage limit" command specifies a maximum DC voltage limit to the charger
- The "output current limit" command specifies a maximum DC current limit to the charger

#### 3.3.3 Firmware loader



larget selection:	Secondary 🔹	
Charger address:	1	
Open source file:	Open	
Selected source file:		
Update progress:		
	Elizab Cloco	۲ <sup>.</sup>

#### EV Powercharger tools user manual



Figure 6 Firmware loader (11-bit)

Target selection:	Secondary 🔹	
Charger address:	1	
Open source file:	Open	
Selected source file:	T-	
Update progress:		

Figure 7 Firmware loader (29-bit)

There are two firmware loaders, one for 11-bit (TBCM protocol) and one for 29-bit (Eltek protocol).

The firmware loader is used to flash the software of an EV Powercharger:

- Secondary software DC/DC and Eltek protocol
- Primary software PFC
- Protocol software TBCM protocol

Select the desired target in the "Target selection" list and charger address to flash an EV Powercharger. Use the "Open" button to locate the appropriate firmware file on your hard drive. Press "Flash" to start the update routine.



# 3.3.4 Charger information



Detected chargers:	•
Name	Data
CAN base identifier	0x2FF
CAN speed	CanSpeed_500Kbit
CAN standard	11-bit
Charger address	1
Charger type	ChargerType_400V
Maximum AC current	16,0
CAN comm. timeout	1000 ms
Primary SW part number	404084,009
Primary SW version	1.00
Protocol SW part number	404083.009
Protocol SW version	1.00
Secondary SW part number	404086.009
Secondary SW version	1.01
Charger part number	241121.030
Charger version	1
Charger protocol	TBCM
Charger serial number	987654321098
CAN software identifier	0x301
CAN software response identifier	0x302

Figure 8 Charger information

The charger information tool presents information for each detected EV Powercharger. Choose individual chargers from the "Detected chargers" list.